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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,063	07/17/2006	Manfred Heim	HEIM3001/JJC/PMB	7469
23364 7590 11/27/2009 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
JOLLEY, KIRSTEN				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
11/27/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/568,063

**Applicant(s)**

HEIM ET AL.

**Examiner**

Kirsten C. Colley

**Art Unit**

1792

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-13, 15-18, 20-34, 39, 40, 54-59 and 64 is/are rejected.
- 7) ☒ Claim(s) 6-8, 14, 19, 35-38, 51-53 and 60-63 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. The Examiner has withdrawn the lack of unity requirement based on the arguments and certified foreign priority document translation submitted in the Petition filed August 7, 2009. Accordingly, all claims are considered herein.

### ***Response to Arguments***

2. The 35 USC 112, 2<sup>nd</sup> paragraph rejections and claim objection have been withdrawn in response to Applicant's amendments to the claims.
3. Applicant's arguments filed July 28, 2009, with respect to the rejection of claims 31-45 over Bonkowski et al. in view of Heider et al. under 35 USC 103(a) have been fully considered and are persuasive, see page 17 of Applicant's arguments. Further, Applicant has provided a certified translation of the foreign priority document which pre-dates the Heider et al. reference, and therefore the Heider et al. reference is not prior art. Therefore, the rejection has been withdrawn. However, upon further consideration and search, a new ground(s) of rejection is made in view of DE 10202035 A1. Accordingly, this action is made non-final.

### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 30 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A “use” claim is not statutory subject matter. Patents may only be granted for “any new or useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.”

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 9-10, 13, 15, 20-34, and 39-41, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 10202035 A1.

US 7,085,058 B2 to Heim is used as a working English translation of DE 10203035 A1, and the cited column and line numbers are from patent number 7,085,058.

DE ‘035 discloses a method of manufacturing a security element for security papers or documents or the like, and the resulting security element product, which contains a thin-layer element with color shift effect that has a reflection layer, an absorber layer, and a spacer/dielectric layer therebetween. DE ‘035 teaches that the layers are preferably produced by means of a vacuum vapor deposition method, however the layers (which teaching includes the spacer/dielectric layer D) can also be printed on (see col. 5, lines 35-37 of Heim’s US patent). DE ‘035 does not provide details of the composition used to perform printing of the dielectric layer D, however it is the Examiner’s position that it would have been obvious for one having

ordinary skill in the art to have used a dispersion of the material taught for the dielectric layer D as the printing ink since a printing ink is a liquid composition and the materials taught by DE '035 (col. 4, lines 47-55) are solid at room temperature. Further, it would have been obvious for one having ordinary skill in the art to have used dispersion particles with monomodal or oligomodal size distribution because it is known in the coating art that use of particles of the same size, or close thereto, produces coatings having higher uniformity and more predictable coating results since there will not be areas with greater thickness and less density due to the presence of large particles and areas with smaller thickness and more density due to the presence of small particles.

As to claim 32, it would have been obvious to have used any conventional printing method, including those claimed, to apply a dielectric layer dispersion with the expectation of successful results since there is not a teaching to the contrary.

As to claims 2-4 and 33-34, it would have been obvious to have used particles having a spherical shape since those are most common, and to have formed a monolayer of particles to ensure that the thickness uniformity of the dielectric layer remains uniform. Further, it would have been obvious for one having ordinary skill in the art to have used particles having a size in the claimed range since DE '035 teaches that the thickness of the dielectric layer is usually in the range of 100 to 1000 nm (col. 4, lines 55-56). As to claim 9, it is noted that in the case where particles of more than a single size are used, the smaller particles would necessarily settle in the spaces between the larger dispersion particles.

As to claim 10, DE '035 teaches use of reflection layer materials that are opaque (col. 4, lines 63-64).

As to claims 13 and 15, DE '035 teaches that a plurality of dielectric layers D may be applied (col. 4, lines 58-62).

As to claims 20-22, 24, and 39-40, DE '035 teaches applying the absorber layer, spacer layer, and reflection layer in the recited order, or vice versa (see Figures 6 and 7). Further, DE '035 teaches there may be an aeral diffraction structure provided on the carrier by embossing in col. 5, lines 56-67.

As to claims 23 and 41, DE '035 teaches that the absorber layer is vapor deposited in col. 5, lines 21-22, and the absorber layer would necessarily have the claimed transmission since similar materials are taught for the absorber layer in DE '035 as in the instant specification.

8. Claims 5, 11-12, 16-18, 42-44, and 46-50, 54-59, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 10202035 A1 as applied to claims 1 and 31 above, and further in view of WO 01/03945 A1.

Throughout its teachings, DE '035 cites WO 01/03945 for many of the features of its invention. WO '945 is similarly directed to the manufacture of a color shift security element.

With respect to claim 5, DE '035 teaches that the dielectric layer D may be one of the dielectric materials taught in WO '945. WO '945 teaches exemplary materials for a dielectric layer on pages 6-7, including the broad teaching of use of "organic monomers and polymers" (page 7, line 4), some of which would necessarily fall within the melting point range of claim 5.

As to claims 16-18 and 42-44, WO '945 teaches that the security element may be formed using a second spacer layer and second absorber layer so that a color shift is recognizable on two sides (col. 9, lines 20-29). It would have been obvious for one having ordinary skill in the art to

have used a similar structure in the method of DE '035 with the expectation of successful results since the teachings of WO '945 are incorporated into the reference of DE '035. It would have further been obvious to have applied the second spacer layer by printing, as discussed above, because use of printing is generally discussed as a means to apply the dielectric/spacer layer in DE '035.

As to claims 11-12, WO '945 teaches use of semitransparent metal layer as the reflection layer, or a transparent reflection layer (col. 7, lines 18-30). It would have been obvious to have incorporated this teaching into the reflection layer of DE '035's color shift element with the expectation of similar, successful results.

With respect to independent claims 46, 55, and 56, WO '945 discloses an alternative embodiment of its invention where the color shifting optical coating of its first embodiment, which is similar to the embodiment disclosed in DE '035, may be used to form color shifting flakes that may be incorporated into a printing ink (see page 9, line 20 to page 10, line 29 of WO '945). WO '945 teaches forming pigments having the layer structure discussed above by applying the layers, then removing the element from the substrate, grinding the element into particles having a predetermined particle size, and mixing the particles (now color shifting pigments) with a binding agent to form a security ink. It would have been obvious to one having ordinary skill in the art to have similarly prepared a security ink having color shifting pigments formed from flakes of a security element formed by the process of DE '035 discussed above (including applying the spacer/dielectric layer by printing) with the expectation of similar, successful results.

The limitations of claims 47-50, 54, 57-59, and 64 are rejected for the same reasons as discussed above with respect to the dependent claims limitations of independent claims 1 and 31.

***Allowable Subject Matter***

9. Claims 6-8, 14, 19, 35-38, 51-53, and 60-63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claim limitations are not taught or fairly suggested by the prior art of DE '035.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kirsten C Jolley/  
Primary Examiner, Art Unit 1792

kcj